

NOTES ON THE BLUE-AND-WHITE WREN

(*Malurus leuconotus*)

By S. R. WHITE, Government School, Morawa.

Of the Australian Fairy Wrens (*Malurus*), the Blue-and-white Wren (*Malurus leuconotus*) has the widest range and yet to the average layman, who knows the birds of this group generally as "Blue Wrens", it is a little-known species. This is more readily understood when one examines the bird's range and the type of habitat in which it is usually found. In Western Australia it occurs "north as far as the Pilbara district and south to a line joining Moora, Corrigin and Norseman. On the coastal plain it has a broken distribution south to Perth" (Serventy and Whittell, *Handbook of the Birds of Western Australia*, 1948). It favours the more arid regions and is not generally found in the more populous portions of the State, although it was recently recorded at the Heirisson Islands, alongside the west end of the Perth Causeway.

Moreover, like many small scrub-frequenting birds, it is of a shy retiring disposition, passing rapidly from shrub to shrub under cover once it has been alarmed. The brightly coloured males, which would be most likely to attract attention, are in striking minority.

My own experiences with this species commenced at Coorow, situate approximately midway between Perth and Geraldton on the Midland Railway line, early in 1947, and during that year I found it to be the commonest member of its genus in that locality. Most of the closer observations were made on a small area of about six and a quarter acres lying immediately behind the school. The situation of this habitat offered a unique opportunity for studying a group of birds in a confined area. A remarkably similar circumstance concerning the same bird is described by N. Favalaro (*The Emu*, vol. 40, 1941), but he states that his aspirations were ruined by the vandalism of children. At Coorow, most of the senior children attending the school were aware of the wrens and took a leading part in conducting their own observations. From time to time they sketched in the area, mapped it, and assisted in counting the birds. They held their own discussions on the significance of the wrens' behaviour and helped to narrow down the "singing areas." The welfare of the whole group of wrens and their nests was a matter of great interest and visits were arranged according to a plan decided upon by popular vote. The children's activities were motivated by a strong desire to work out the life history of the Blue-and-white Wrens.

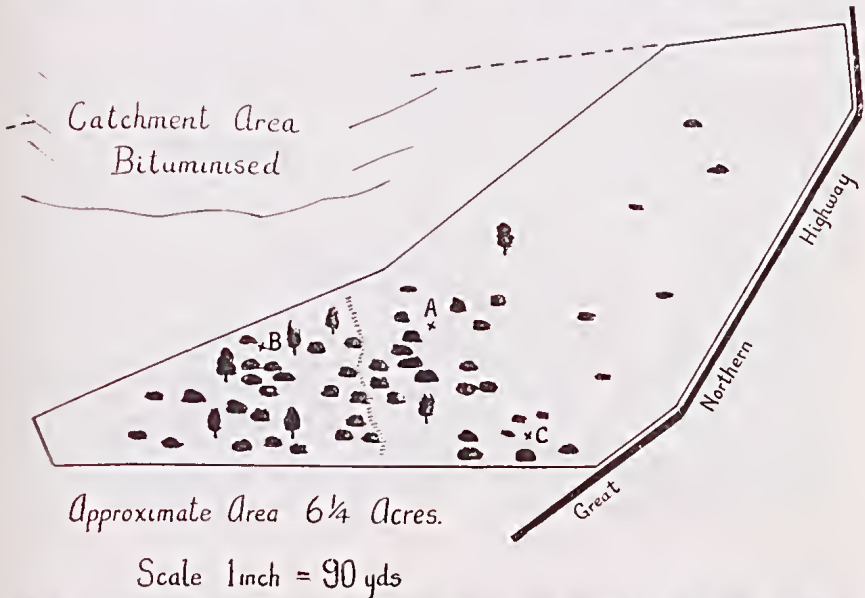
The observation area consisted of a re-growth of small Jam trees, spiny acacias and low prickly shrubs about three feet high, and open meadow. It was enclosed by the school fence, a bituminised rain-catchment surface, a field in fallow and a highway bordered by gravel pits. During the year its breeding species of birds, in addition to the wrens, consisted of at least four pairs of White-fronted Chats and a pair of Pipits. Kestrels, Black-faced

Cuckoo-shrikes, Black-faced Woodswallows, Little Crows, Ravens, Dusky Miners, Singing Honeyeaters, Red Wattlebirds, Pied Butcherbirds and Painted Quails were also observed there during the year and the body of a dead Mountain Duckling was found beneath a bush.

Wrens were first noticed on May 29, when their flock calls were heard in some low bushes along the Great Northern Highway and four birds in female plumage were flushed. Henceforth I was always able to find them somewhere in the area. The discovery of Blue-and-white Wrens in this locality led to examinations of likely looking spots further afield, and in these latter places counts were made but closer observation was confined to the area adjacent to the school.

Counting

First counts were made on May 31, and these were continued intermittently until October 12, when they were abandoned partly because of confusion with young birds of the year. The counts



Sketch-map of study area and nest sites (marked A, B and C). The hatching represents the territory boundary of the coloured bird (male of nest B).

were made with respect to eight communities; in each case the numbers of birds in female plumage and those in male plumage being listed. On the main observation area, eight adult birds were recorded at the first and at the last count. Only one of these was a fully coloured male, and this is the only member of the whole community whose movements could be checked, as I could never properly distinguish between individuals of the other seven. The following figures compiled from counting indicate the unusually low percentage of coloured males in relation to the whole popu-

lation, and I suggest, may have some bearing on the general opinion of most field observers that the male of this species is a particularly shy and elusive bird.

<i>Communities</i>	<i>Coloured males</i>	<i>Total birds</i>
8	5	61

The percentage of coloured birds in the total population observed during the months May to October, excluding young birds of the season, is only 8.2%. While it is realised that the numbers submitted are much too low for accurate conclusion, the indications are of some interest when examined in relation to the following two points: namely, the time taken for the male to acquire the full blue-and-white plumage, and the average life of a small songbird.



The Study Area; nest C is situate in the bush in the foreground.

Concerning the former, F. Lawson Whitlock states (in Mathews' *Birds of Australia*), "full nuptial plumage as a rule, is not attained until the third year." Unfortunately, relating to the second point, there are no data available for small Australian songbirds, but Stuart Smith (*How to Study Birds*, p. 166), gives an interesting table compiled from ringing data and concerning four British species. Available material indicated an average span under natural conditions of from 1 to 1 $\frac{3}{4}$ years. Assuming a similar life span for *M. lcuconotus*, it is obvious that comparatively few males would survive long enough to attain the full colour development.

Favaloro mentions that it is possible by using a quiet approach to observe the birds, "even the elusive male," at close quarters.

I have always found this to be the only worth-while method of attempting to watch *Malurus*. It was possible to call up all of the birds including the fully coloured male.

Territory and Song

From general observations made during May and June, it appeared that the eight birds moved more or less at random over the whole territory, and up to that time such may have been the case. Subsequent behaviour and the movements of the single recognisable individual—the blue and white bird—have led me to assume that there is some kind of territorial division within the group during the breeding season. Coloured celluloid fineh rings were procured for the purpose of banding the young, but they had flown before their arrival.

The typical Fairy Wren call, described by A. H. Chisholm as "reeling hurried, sparkling cascades of bird melody," is more or less typical of the Blue-and-white birds' calls, but the latter has a distinct quality which makes it one of the easiest to recognise. It has a simple rhythm and is strangely mechanical. The native name *Yerreeyarro* (given in *Birds of Western Australia*, Serventy and Whittell), if repeated, is an excellent word description of the reeling call of this species. There are also the flock calls which I am unable to distinguish from those of other *Malurus*.

In his description of the habits of Blue-and-white Wrens at Mildura, Favaloro mentions the manner in which they will sometimes ascend through the shrubs to a topmost twig "to take stock of the outside world and occasionally to pour forth songs." The Coorow birds sang so frequently in this fashion during late July and August that it was possible to associate the behaviour with certain fixed localities—in fact, most of this singing occurred in certain bushes. From the schoolroom Blue-and-white Wrens could be heard calling throughout the day, but strongest singing occurred before mid-day, and again towards dusk.

The first night-calling was heard on July 31, and on the evening of August 3 at a first attempt I was able to stimulate a response from one of the bushes repeatedly used by the wrens for singing during the day. At this stage it was possible to detect three separate groups of birds, defined by singing, by roosting and as centres of considerable activity throughout the day. Pursuits in which three birds were usually engaged appeared to be marked by strong singing, often from "topmost twigs." Of the actual movements of individuals between these groups I could form no conclusions, but the coloured bird was not seen beyond the area marked "B" after mid-August, when an unsuccessful experiment was made to "drive" him off. He repeatedly moved to right or left in the low scrub and circled back into his sector again. An indication of this "boundary" is given in the diagram.

Conclusions formed from the general behaviour, roosting, and singing areas of the whole population of eight birds, were that there would be three nests, and these were found on September 27 (A and B) and on October 12 (C). In no case was the nest found

either in a "roost bush," or a "singing bush," but within three or four yards radius.

Nest A was remarkably well concealed within a low pile of dead bushes cut for burning. It was not visible without removing some of the debris, and only the sudden flushing of the female revealed its presence. The young hatched on September 30 and left the nest on October 13. Three adults, one with a blackish bill and two with amber bills, were in attendance.



Male Blue-and-white Wren in mature plumage (owner of territory B).

Nest B was also well concealed, being situated in the centre of a low, flowering acacia bush. The fully coloured male and a female were feeding young in the nest when this was found. Later, another bird in female plumage but with a blackish bill was observed to assist in feeding the two young. One of the eggs in this nest did not hatch.

Nest C in a dead spiny acacia contained three eggs on October 12, and on October 19 one egg had hatched. On October 25 a very heavy thunderstorm occurred, and immediately after it had passed, an examination of the nest was made. There were then three young, and the nest appeared to be undamaged, but only one young bird was there on November 2 and it left the nest on the following day. Three adults were seen together at the nest on several occasions, two with dark brown bills and one with a much lighter bill.

A list of nests, including two other groups C and D in other localities, is given.

Nest	Eggs	Aspect of entrance to nest	No. of young	Height
A	3	NW	2	12in.
B	3	NW	3	6in.
C	3	N	1	12in.
D		N	3	18in.
E			3	

Males from nests A and C were both breeding in immature or "female" plumage. The plumage of the throat and breast appeared to be slightly lighter and the bills darker, and the blue of the tail a little deeper. There were no signs of the bright blue of the mature male body plumage or of the silky white wings. F. Lawson Whitlock (in Mathews' *Birds of Australia*) states that "males frequently breed in the brown plumage."

The skins of seven immature males were examined at the Western Australian Museum, Perth, in the hope that some characteristic differences that would aid the field identification of young males, would be found. Bill colorations were indicated as follows: black, very dark brown, brown, and flesh pink. Three skins lacked the information. Many field observers familiar with *Malurus* consider the darker coloration of the bill to be a good indication of the male sex in birds of immature plumage. Three of the skins showed marked flecking of white over the breast and throat, but none of the birds observed in the Coorow district were in this intermediate stage.

From the continued singing during November, it was expected that the birds would nest again, but although frequent examinations were made until my departure in late December, no signs of renewed breeding activity were found, and at that time the weather had become very warm and singing had abated. N. Favalaro (*The Emu*, vol. 40), indicates that the birds observed by him were double-brooded and may possibly have nested a third time. New nests were commenced as soon as the young had left the old

ones. The Splendid Wren (*M. splendens*) is certainly double-brooded in some localities. Lovely Wrens (*M. amabilis*) raise more than one brood (S. R. White, *The Emu*, vol. 46), and the Superb



Female Blue-and-white Wren (of nest C; this is the nest that survived the thunderstorm). [S. R. White

Wren (*M. cyaneus*) may raise as many as four broods in a season (Mrs. A. R. A. Clutcher, *The Emu*, vol. 43). It seems likely that single clutches occur in drier areas where there is little permanent water and the season is of short duration.

Various forms of display have been observed in other members of the genus (W. H. Loaring, *The Emu*, vol. 48) and it seems probable that courtship and song are closely associated with the holding of a nesting territory. When the nest is completed the female broods. Other birds of both sexes assist in feeding the young. Many observers consider these unmated birds are the young of a previous hatching. (J. D. Waterhouse, *The Emu*, vol. 39, on *M. assimilis*; *The Emu*, vol. 39 on *M. assimilis* and *M. cyaneus*; and H. Webster, *The Emu*, vol. 47, on *M. elegans*).

The apparent grouping, and plurality of males and females about the nesting area after the young have hatched or after brooding commences, raises the possibility of there being a common feeding territory. It is one of the interesting and distinctive features of Fairy Wrens, and our lack of knowledge concerning their whole life history illustrates the necessity for soundly organised observations based on banding with coloured rings. Unfortunately without this form of fixing the identity of individuals, conclusions are insecure.